UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,101	12/31/2001	Xiaolin Lu	TI-33448	5862

23494 7590 09/08/2006		

TEXAS INSTRUMENTS INCORPORATED
P O BOX 655474, M/S 3999
DALLAS, TX 75265

EXAMINER
WILSON, ROBERT W

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/037,101	LU ET AL.
	Examiner	**Art Unit**	
	Robert W. Wilson	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 July 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,8,10,11,13-16,19,21,22 and 24* is/are rejected.

7)☒ Claim(s) *4-7, 9, 12, 17-18, 20, & 23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Allowable Subject Matter

1.   Claim 13 is allowed. The following is an Examiner's statement of reasons for allowance:

Claim 13 considered allowable since when reading the claims in light of the specification, none

of the references of record alone or in combination disclose or suggest the combination of

limitations specified in the independent claims including:

"A memory location for storing an expectation time value representing the time an

acknowledgmeent is expected to be received by the sender based on the delay", as specified in

claim 13.

Claim Objections

2.   Claims 4-7, 9, 12, 17-18, 20, & 23 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 102

1.   Claims 1, 3, 8, 10-11, 16, 19, 21-22, & 24 are rejected under 35 U.S.C. 102(e) as being

anticipated by Lundh (U.S. Patent No.: 6,577,872).

Referring to claim 1, Lundh teaches: wireless communication system (Fig 1) comprising:

A sender having a timer that produces a timing reference (The MTU (sender) having a oscillator
(timer) that produces t1 (timing reference) per col. 7 line 40-col. 9 line 25)

A time signal generator that sends the timing reference to a receiver (The MTU (time signal
generator) sends t1 to the STU (receiver) per col. 7 line 40-col. 9 line 25)
A ranging offset determine that computes a delay associated with the transmitting between the
sender and receiver (The MTU has a SFN adjust (ranging offset determiner) that computes the t2
predicted – t2 (delay) between the MTU (sender) and STU (receiver) per col. 12 lines 1-7)
The receiving having a timer that is synchronized to the timer of the sender based at least on one
of the timing reference, the delay, and the timer of the receiver (The STU (receiver) has an
oscillator (timer) that is synchronized to the SFN adjust (delay) per col. 14 lines 1-43)
The sender further comprising a store for storing an expectation time based on the delay (The
MTU (sender) calculates t2 predicted (expected time based on delay) which is inherently stored)
per col. 14 lines 1-43)

Regarding claim 3, wherein the expectation time is an expected receiver time (t2 predicted is the
time expected to receiver per col. 14 lines 1-7) the system (MTU & STU per Fig 1) further
comprising:
An acknowledgement relationship establisher that establishes a relationship between the time
reference and the expected receive time for an outgoing packet (The SFN offset determines the
relationship of the reference time (t2) and the expected receive time (t2 predicted) for the
outgoing packet (message) per col. 14 lines 1-7)
An acknowledgment resolver that determined whether an acknowledgment received
corresponding to the outgoing packet utilizing the expected receive time (The SFN offset
determined whether the t2 receive corresponds to the outgoing packet (message) utilizing the t2
predicted per col. 14 lines 1-7)

Referring to claim 8, Lundh teaches: a system for transmitting packets (MTU per Fig 1)
comprising: a timer (oscillator per Fig 1) that produces a timing reference (t1 per col. 12 lines
45-51); a packet building component builds a packet (MTU builds a message (packet) per col. 12
lines 45-51) and transmits the packet to the receiver (MTU sends a message (packet) to the STU
(receiver) per col. 12 lines 45-51). The system calculates the receive time relative to the timing
reference (The MTU (system) calculates t2 predicted using t1 per col. 14 lines 1-7 and inherently

stores the value of t2 predicted which is the time that the MTU expects the message (packet) to be received by the STU)

An acknowledgement resolving component that extracts an acknowledgment time corresponds to the receive time of the packet (The SFN adjust (acknowledgment resolving component) extracts t2 from the message and takes the difference between the t2predicted and t2 or determines if the acknowledgment time corresponds to the received message (packet)) per col. 14 lines 1-8)

Regarding claim 10, further comprising a time signal generator that sends the timing reference to the receiver to establish time synchronization between the timer and a timer in the receiver (The SFN adjust (time signal generator) sends the SFN offset message to the STU (receiver) in order to synchronize the oscillator in the STU with the oscillator in the MTU (timer) per col. 7 lines 47-col. 9 line 24)

Regarding claim 11, further comprising a ranging offset determiner that computes a delay associated with transmitting between the system and the receiver, the delay being utilized to establish time synchronization between the system and the receiver (The SFN adjust (ranging offset determiner) calculates the t2-t2 predicted (delay) associated with the message transmitted between the MTU (system) and STU (receiver) and this difference is sent in a message to the STU from the MTU in order to synchronize the STU oscillator per col. 14 lines 1-43).

Referring to claim 16, Lundh teaches: A method for control packet flow (STU & MTU perform the method of controlling packet flow per Fig 1) comprising:
Establishing a base time (oscillator in MTU establishes a time base per col. 6 lines 26-42)
Computing a ranging offset between a sender and receiver (SFN offset is the ranging offset between the MTU (sender) and STU (receiver) per col. 14 lines 1-10)
Communicating at least one of the base time and the ranging offset to the receiver (A SFN offset is communicated to the STU (receiver) per col. 14 lines 1-43)
Synchronizing the timer of at least one of the sender and the receiver based on at least one of the base time and the ranging offset (Oscillator in the STU (receiver) is synchronized based upon SFN adjust (ranging offset) per col. 14 lines 1-43)
Transmitting a packet to the receiver (message (packet) is transmitted to the STU (receiver))
Storing an expected time that the packet is expected to be received at the receiver (t2 predicted is expected time that the packet is to be received by the STU (receiver) is calculated and inherently stored per col. 14 lines 1-43)
Determining whether an acknowledgment contains a time value corresponding to the expected receive time such that the acknowledgement corresponds to the packet (The SFN adjust extracts the value of t2 which corresponds to the receive and acknowledgment time of the message of packet per col. 14 lines 1-43)

Referring to claim 19, Lundh teaches: A method for control packet flow (STU & MTU perform the method of controlling packet flow) comprising:

Transmitting a packet from a sender to a receiver (sending a message (packet) from the MTU (sender) to a receiver (STU) per Figure 10)

Storing an expected time that the packet is expected to be received at the receiver (t2 predicted is expected time that the packet is to be received by the STU (receiver) is calculated and inherently stored)

Extracting an acknowledgement time from an acknowledgement from the receiver (The SFN adjust extracts t2 (acknowledgement time) from a response message (acknowledgment from the STU (receiver) per Fig 10 and per col. 14 lines 1-10)

Determining whether an acknowledgment contains a time value corresponding to the expected receive time such that the acknowledgement corresponds to the packet (The SFN adjust extracts the value of t2 which corresponds to the expected receive and acknowledgment time of the message of packet per Fig 10 and per col. 14 lines 1-10))

Regarding claim 21, the establishing synchronization comprising transmitting a base time and a ranging offset to the receiver and adjusting the timer of the receiver to the time of the sender utilizing the base time and the ranging offset (A t1 (base time) is transmitted per Fig 10 and a SFN adjust (ranging offset) is sent to the STU (receiver) thus utilizing both the base time and ranging offset per col. 14 lines 1-43)

Regarding claim 22, the acknowledgment time is the time when the receiver generates the acknowledgment (t2 is the time when the STU (receiver) generates receiving the message (acknowledgement) per Fig 10)

Referring to claim 24, Lundh teaches: a system (MTU & STU per Fig 1) for controlling packet flow comprising:
Means for synchronizing time between a sender and receiver (SFN adjust is calculated in the MTU provides the mean for synchronizing the time between the oscillator in the MTU (sender) and the oscillator in the STU (receiver) per Fig 10 and per col. 14 lines 1-10)
Means for transmitting a packet between a sender and a receiver (62, 67 subscript 1 77 subscript 1 and 72 subscript 1 per Fig 1 sends a message between the MTU (sender) and STU (receiver))

Means for recording a time at which the packet is expected to be received (MTU calculates and inherently stores t2 predicted (expected time to receive) per col. 14 lines 1-7)
Means for receiving a time-stamped acknowledgment to the transmitted packet (The MTU has a port per Fig 1 which is the mean for receiving a message (acknowledgement) with a value of t2 which is the time stamp for the received message per Fig 10)
Means for determining whether an acknowledgement corresponds to a transmitted packet utilizing a time stamp in the time-stamped acknowledgment and the time at which the packet is expected to be received.(The MTU extracts the value of t2 which is the acknowledgment

corresponding to the transmitted message (packet) where t2 is the time expected to be received per Fig 10 and per col. 14 lines 1-10)

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lundh (U.S.

Patent No.: 6,577,872) in view of Taylor (Patent Pub No.; US2002/0131398).

Referring to claim 2, Lundh teaches the system of claim 1,

Lundh does not expressly call for: where the timing reference is a 32 bit global timing reference.

Taylor teaches: sending the drift between clocks in a 32 bit global timing reference per Para [0032]

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the 32 bit global timing reference of Taylor to send the SFN offset of Lundh in order to send the offset which is a drift between the two clocks in a format that is standards based global timing reference format in order to make sure that the system interoperates with legacy systems.\

Response to Amendment

6.   Applicant's arguments with respect to claims 1-13 & 16-24 have been considered but are
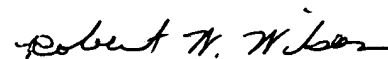
moot in view of the new ground(s) of rejection.

Conclusion

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W. Wilson whose telephone number is 571/272-3075. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571/272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Robert W Wilson
Examiner
Art Unit 2616

RWW
8/28/06